ML1600 Introduction to Industrial Technology and Production Maintenance 6.0 credits

Introduktion till industriell teknik och produktionsunderhåll

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for ML1600 valid from Autumn 2017

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

On completion of the course, the student should:

- be familiar with basic concepts in the fields of maintenance, sustainability and operational reliability.
- understand which system properties that influence sustainability and operational reliability
- be familiar with basic safety regulations that the public authorities require from industrial facilities concerning people and environment
- understand how the production process, the production target and economics are influenced by sustainability and operational reliability in various types of industries.
- understand the bases how product quality is influenced by the production process its sustainability and operational reliability.
- be able to work in a group
- have an insight in what it implies to work on the shop floor and in process industry obtain possibility to increase interest and commitment to study the chosen field (operational reliability and maintenance)
- know and be able to account for, as well as follow safety regulations for work in a manufacturing workshop
- be able to handle typical machine-tools that are used in manufacturing industry such as turning, milling, drilling and NC machines.
- take independently forward and document a process plan to produce a simple product in a workshop
- understand and use a engineering drawing as manufacturing documentation
- use manual measuring devices (calipers, etc) to verify that it produced the product corresponds to the manufacturing documentation.
- by means of guides and the instructor choose appropriate tools and cutting data or a given material and a given process

Course contents

- The course gives basic knowledge of how industrial production is carried out, which are the crucial properties, the stakeholders, how it influences and is influenced by the environment, as well as what are the engineer's role and responsibility. Students is introduced to the shop floor, to the manufacturing equipment and to practical skills in the use of turning, milling, drilling and NC machines, etc. The student learns to handle the machines in a skilled and safe way.
- The student gets practice in group work for developing and documenting a simple process plan to produce a product in the workshop, understand and use an engineering drawing as manufacturing documentation, as well as in verifying, with manual measuring devices, that it produced the product corresponds to the manufacturing documentation.

- By means of guides choose appropriate tools and cutting data for a given material and a given process
- During study visit at nearby industries (Scania and AstraZeneca) the students are introduced to professional engineers and get an insight in the manufacturing processes. By interviewing professional engineers, the students get good understanding of their role in the company

Course literature

Meddelas tiio veckor före start.

Examination

- INL1 - Assignment 1, 0.5 credits, grading scale: P, F
- INL2 - Assignment 2, 0.5 credits, grading scale: P, F
- PRO1 - Project, 1.0 credits, grading scale: P, F
- TEN1 - Exam, 4.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Other requirements for final grade

Examination

Written assignments

Shop floor project

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.